DEPARTMENT of ENVIRONMENTAL SERVICES Water Division - Watershed Management Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

| Lake: SILVER | LAKE | Lake Area (ha): | 13.64 |
|---------------|----------------|------------------------------------|---------|
| Town: | HOLLIS | Maximum depth (m): | 7.3 |
| County: | Hillsborough | Mean depth (m): | 2.8 |
| River Basin: | Merrimack | Volume (m³): | 387000 |
| Latitude: | | Relative depth: | 1.8 |
| Longitude: | 71°35'54" W | Shore configuration: | 1.37 |
| Elevation (ft | 274 | Areal water load (m/yr) | 9.14 |
| Shore length | (m): 1800 | Flushing rate (yr ⁻¹): | 3.20 |
| Watershed are | ea (ha): 248.6 | P retention coeff.: | 0.56 |
| % watershed p | oonded: 0.0 | Lake type: natura | l w/dam |

| BIOLOGICAL: | 2 February 1999 | 10 September 1998 |
|------------------------------------|--------------------|-----------------------|
| DOM. PHYTOPLANKTON (% TOTAL) #1 | NO WINTER PLANKTON | COELOSPHAERIUM 95% |
| #2 | ANALYZED | |
| #3 | | |
| PHYTOPLANKTON ABUNDANCE (units/mL) | | |
| CHLOROPHYLL-A (µg/L) | | 3.27 |
| DOM. ZOOPLANKTON (% TOTAL) #1 | | NAUPLIUS LARVA 37% |
| #2 | | CYCLOPOID COPEPOD 35% |
| #3 | | |
| ROTIFERS/LITER | | 20 |
| MICROCRUSTACEA/LITER | | 166 |
| ZOOPLANKTON ABUNDANCE (#/L) | | 185 |
| VASCULAR PLANT ABUNDANCE | | Sparse |
| SECCHI DISK TRANSPARENCY (m) | | 3.4 |
| BOTTOM DISSOLVED OXYGEN (mg/L) | 13.6 | 6.2 |
| BACTERIA (E. coli, #/100 ml) #1 | | |
| #2 | | |
| #3 | | |

SUMMER THERMAL STRATIFICATION:

not stratified

Depth of thermocline (m): None Hypolimnion volume (m^3) : None Anoxic volume (m^3) : None

| CHEMICAL: | | | SILVER LA | AKE | |
|--------------------------|---------|-----------|-----------|-----------|--------|
| | 2 Febru | uary 1999 | 10 : | September | 1998 |
| DEPTH (m) | 1.0 | 2.0 | 1.0 | | 3.0 |
| pH (units) | 6.9 | 6.9 | 7.4 | | 7.3 |
| A.N.C. (Alkalinity) | 15.4 | 17.0 | 12.9 | ŧ | 12.8 |
| NITRATE NITROGEN | 0.10 | 0.08 | < 0.05 | | < 0.05 |
| TOTAL KJELDAHL NITROGEN | 0.40 | 0.40 | 0.40 | | 0.50 |
| TOTAL PHOSPHORUS | 0.008 | 0.010 | 0.007 | | 0.009 |
| CONDUCTIVITY (µmhos/cm) | 182.2 | 190.1 | 177.5 | | 177.1 |
| APPARENT COLOR (cpu) | 11 | 12 | | | |
| MAGNESIUM | | | 1.37 | | |
| CALCIUM | | | 6.8 | | |
| SODIUM | | | 24.5 | | |
| POTASSIUM | | | 1.28 | | |
| CHLORIDE | 43 | 46 | 43 | | 41 |
| SULFATE | 8 | 8 | 6 | | 6 |
| TN : TP | 63 | 48 | 57 | | 56 |
| CALCITE SATURATION INDEX | | | 2.0 | | |

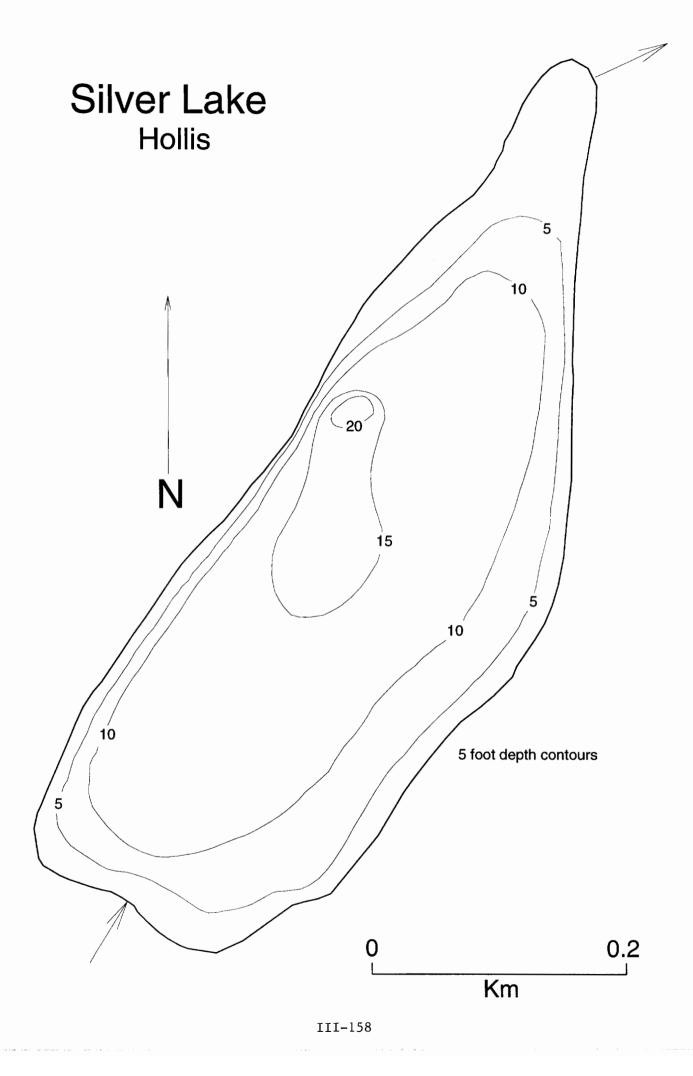
All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1998

| D.O. | S.D. | PLANT | CHL | TOTAL | CLASS |
|------|------|-------|-----|-------|--------|
| ** | 2 | 0 | 0 | 2 | Oligo. |

COMMENTS:

- 1. aka Long Pond.
- 2. Silver Lake was previously surveyed and classified in 1978 and was rated oligotrophic in both years. Despite the oligotrophic rating, Silver Lake has had episodes in the past of clumps of bluegreen algae visible in the water column. A bluegreen alga (Coelosphaerium) was dominant in 1998 but did not form clumps or scums and the overall abundance was low.
- 3. Conductivity, sodium and chloride levels suggest some road salt runoff into the pond.
- 4. Heavily developed along the eastern shoreline and Silver Lake State Park is located adjacent to the outlet (northern end).



FIELD DATA SHEET

LAKE: SILVER LAKE

DATE: 09/10/1998

TOWN: HOLLIS

WEATHER: PARTLY SUNNY & BREEZY

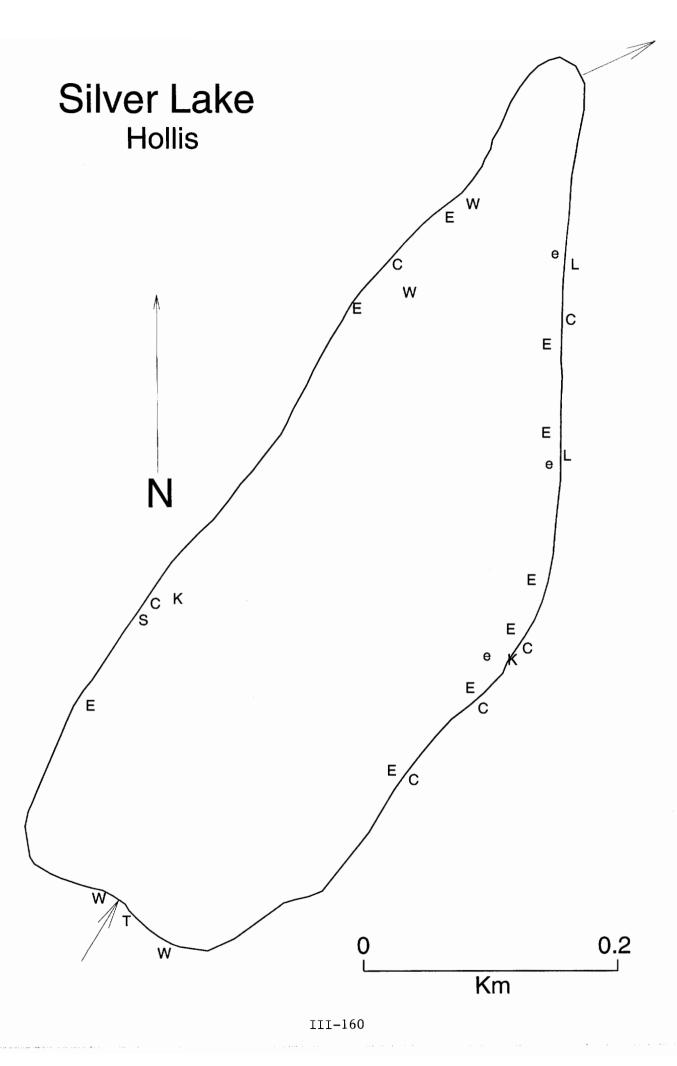
| DEPTH (M) | TEMP (°C) | *DISSOLVED OXYGEN | OXYGEN SATURATION |
|-----------|-----------|----------------------|----------------------|
| 0.1 | 22.0 | 7.6 | 86 % |
| 1.0 | 22.0 | 7.6 | 86 % |
| 2.0 | 21.5 | 7.6 | 84 % |
| 3.0 | 21.2 | 7.4 | 82 % |
| 4.0 | 21.0 | 7.0 | 79 % |
| 5.0 | 21.0 | 6.8 | 75 % |
| 6.0 | 20.0 | 6.2 | 68 % |
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SECCHI DISK (m): 3.4 COMMENTS:

BOTTOM DEPTH (m): 7.0

TIME: 1230

*Dissolved oxygen values are in mg/L



AQUATIC PLANT SURVEY LAKE: SILVER LAKE TOWN: HOLLIS DATE: 09/10/1998 PLANT NAME Key ABUNDANCE GENERIC COMMON E Eriocaulon septangulare Pipewort Common/Abun С Cyperus Sedge Common е Elodea nuttallii Waterweed Common W Potamogeton Pondweed Sparse S Sparganium Bur reed Sparse ${f T}$ Typha Cattail Sparse \mathbf{L} Lythrum salicaria Purple loosestrife Sparse OVERALL ABUNDANCE: Sparse GENERAL OBSERVATIONS: